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FIGURE 1

*Staphylothermus marinus* - P1-12LC

1	ATG TCT TTA AAC AAG CAC TCT TGG ATG GAT ATG ATA ATA TTT ATT CTC AGC TTT TCT TTC	60
1	Met Ser Leu Asn Lys His Ser Trp Met Asp Met Ile Ile Phe Ile Leu Ser Phe Ser Phe	20
61	CCA TTA ACA ATG ATC GCA TTA GCT ATC TCT ATG TCG TCA TGG TTT AAT ATA TGG AAT AAT	120
21	Pro Leu Thr Met Ile Ala Leu Ala Ile Ser Met Ser Ser Trp Phe Asn Ile Trp Asn Asn	40
121	GCA TTA AGC GAT CTA GGA CAT GCT GTT AAA AGC AGT GTT GCT CCA ATA TTC AAT CTA GGT	180
41	Ala Leu Ser Asp Leu Gly His Ala Val Lys Ser Ser Val Ala Pro Ile Phe Asn Leu Gly	60
181	CTT GCA ATT GGT GGG ATA CTA ATT GTT ATA GTT GGT TTA AGA AAT CTT TAT TCG TGG AGT	240
61	Leu Ala Ile Gly Gly Ile Leu Ile Val Ile Val Gly Leu Arg Asn Leu Tyr Ser Trp Ser	80
241	AGA GTT AAA GGA TCT TTA ATC ATA TCC ATG GGT GTA TTT CTT AAC TTA ATA GGG GTT TTC	300
81	Arg Val Lys Gly Ser Leu Ile Ile Ser Met Gly Val Phe Leu Asn Leu Ile Gly Val Phe	100
301	GAC GAA GTA TAT GGT TGG ATA CAT TTC CTA GTC TCA GTA TTG TTT TTC TTA TCA ATA ATA	360
101	Asp Glu Val Tyr Gly Trp Ile His Phe Leu Val Ser Val Leu Phe Phe Leu Ser Ile Ile	120
361	GCA TAT TTC ATA GCT ATA TCA ATA CTT GAC AAA TCA TGG ATA GCT GTT CTA CTA ATA ATA	420
121	Ala Tyr Phe Ile Ala Ile Ser Ile Leu Asp Lys Ser Trp Ile Ala Val Leu Leu Ile Ile	140
421	GGT CAT ATT GCA ATG TGG TAT CTA CAC TTT GCT TCA GAG ATT CCG AGA GGT GCG GCT ATT	480
141	Gly His Ile Ala Met Trp Tyr Leu His Phe Ala Ser Glu Ile Pro Arg Gly Ala Ala Ile	160
481	CCC GAG TTA TTA GCG GTA TTC TCG TTT TTA CCA TTC TAT ATA AGA GAC TAT TTT AAA TCA	540
161	Pro Glu Leu Leu Ala Val Phe Ser Phe Leu Pro Phe Tyr Ile Arg Asp Tyr Phe Lys Ser	180
541	TAC ACT AAA CGA TAG	555
181	Tyr Thr Lys Arg End	185

FIGURE 2

## Pyrodictium - TAG11-17LC

1	ATG AAA CTC CTT GAG CCC ACA AAT ACC TGG TAC ACG CTG TTA CAG GAT TTA GCA TTG CAT	60
1	Met Lys Leu Leu Glu Pro Thr Asn Thr Ser Tyr Thr Leu Leu Gln Asp Leu Ala Leu His	20
61	TTT GCA TTT TAC TGG TTT CTG GCC GTG TAT ACG TGG TTA CCC GGT GTC CTA GTC CCG GGC	120
21	Phe Ala Phe Tyr Trp Phe Leu Ala Val Tyr Thr Trp Leu Pro Gly Val Leu Val Arg Gly	40
121	GTA GCT GTG GAC ACA GGG GTG GCT CGG GTG CCT GGG CTC GGC CGG CGC GGT AAG AGG CTG	180
41	Val Ala Val Asp Thr Gly Val Ala Arg Val Pro Gly Leu Gly Arg Arg Gly Lys Arg Leu	60
181	CTC CTG GCC GCT GTG GCT GTC TTG GCG CTT GTT GTG TCC GTT GTT GTC CCG GCT TAT GTG	240
61	Leu Leu Ala Ala Val Ala Val Leu Ala Leu Val Val Ser Val Val Val Pro Ala Tyr Val	80
241	GCG TAT AGT AGT CTG CAC CCG GAG AGC TGT CGG CCC GTT GCG CCG GAG GGG CTC ACC TAC	300
81	Ala Tyr Ser Ser Leu His Pro Glu Ser Cys Arg Pro Val Ala Pro Glu Gly Leu Thr Tyr	100
301	AAA GAG TTC AGC GTG ACC GCG GAG GAT GGC TTG GTG GTT CGG GGC TGG GTG CTG GGC CCC	360
101	Lys Glu Phe Ser Val Thr Ala Glu Asp Gly Leu Val Val Arg Gly Trp Val Leu Gly Pro	120
361	GGC GCT GGG GGC AAC CCG GTG TTC GTT TTG ATG CAC GGG TAT ACT GGG TGC CGC TCG GCG	420
121	Gly Ala Gly Gly Asn Pro Val Phe Val Leu Met His Gly Tyr Thr Gly Cys Arg Ser Ala	140
421	CCC TAC ATG GCT GTG CTG GCC CCG GAG CTC GTG GAG TGG GGG TAC CCG GTG GTT GTG TTC	480
141	Pro Tyr Met Ala Val Leu Ala Arg Glu Leu Val Glu Trp Gly Tyr Pro Val Val Val Phe	160
481	GAC TTC CGG GGC CAC GGG GAG AGC GGG GGC TCG ACG ACG ATT GGG CCC CGG GAG GTG CTG	540
161	Asp Phe Arg Gly His Gly Glu Ser Gly Gly Ser Thr Thr Ile Gly Pro Arg Glu Val Leu	180
541	GAT GCC CGG GCT GTG GTG GGC TAT GTC TCG GAG CGG TTC CCC GGC CGC CGG ATA ATA TTG	600
181	Asp Ala Arg Ala Val Val Gly Tyr Val Ser Glu Arg Phe Pro Gly Arg Arg Ile Ile Leu	200
601	GTG GGG TTC AGT ATG GGC GGC GCT GTA GCG ATC GTG GAG GGT GCT GGG GAC CCG CGG GTC	660
201	Val Gly Phe Ser Met Gly Gly Ala Val Ala Ile Val Glu Gly Ala Gly Asp Pro Arg Val	220
661	TAC GCG GTG GCT GCT GAT AGC CCG TAC TAT AGG CTC CGG GAC GTC ATA CCC CGG TGG CTG	720
221	Tyr Ala Val Ala Ala Asp Ser Pro Tyr Tyr Arg Leu Arg Asp Val Ile Pro Arg Trp Leu	240
721	GAG TAC AAG ACG CCG CTG CCG GGC TGG GTG GGT GTG CTG GCC GGG TTC TAC GGG AGG CTG	780
241	Glu Tyr Lys Thr Pro Leu Pro Gly Trp Val Gly Val Leu Ala Gly Phe Tyr Gly Arg Leu	260
781	ATG GCG GGC GTT GAC CTC GGC TTC GGC CCC GCT GGG GTG GAG CGC GTG GAT AAG CCG TTG	840
261	Met Ala Gly Val Asp Leu Gly Phe Gly Pro Ala Gly Val Glu Arg Val Asp Lys Pro Leu	280
841	CTG GTG GTG TAT GGG CCC CGG GAC CCG CTG GTG ACG CGG GAC GAG GCG AGG AGC CTG GCG	900
281	Leu Val Val Tyr Gly Pro Arg Asp Pro Leu Val Thr Arg Asp Glu Ala Arg Ser Leu Ala	300
901	TCC CGT AGC CCG TGT GGC CGT CTC GTC GAG GTT CCT GGG GCT GGC CAC GTG GAG GCC GTG	960
301	Ser Arg Ser Pro Cys Gly Arg Leu Val Glu Val Pro Gly Ala Gly His Val Glu Ala Val	320
961	GAT GTG CTC GGG CCG GGC CGC TAC GCA GAC ATG CTG ATA GAG CTG GCG CAC GAG GAG TGC	1020
321	Asp Val Leu Gly Pro Gly Arg Tyr Ala Asp Met Leu Ile Glu Leu Ala His Glu Glu Cys	340
1021	CCT CCG GGG GCC GGT GGC TGA	1041
341	Pro Pro Gly Ala Gly Gly End	347

FIGURE 3

*Archaeoglobus Venificus* SN P6-24LC

1	ATG CCA TAT GTT AGG AAT GGT GGT GTA AAT ATC TAT TAT GAA CTG GTG GAT GGA CCT GAG	60
1	Met Pro Tyr Val Arg Asn Gly Gly Val Asn Ile Tyr Tyr Glu Leu Val Asp Gly Pro Glu	20
61	CCA CCA ATT GTC TTT GTT CAC GGA TGG ACA GCA AAT ATG AAT TTT TGG AAA GAG CAA AGA	120
21	Pro Pro Ile Val Phe Val His Gly Trp Thr Ala Asn Met Asn Phe Trp Lys Glu Gln Arg	40
121	CGT TAT TTT GCA GGC AGG AAT ATG ATG TTG TTT GTC GAT AAC AGA GGT CAT GGC AGG TCC	180
41	Arg Tyr Phe Ala Gly Arg Asn Met Met Leu Phe Val Asp Asn Arg Gly His Gly Arg Ser	60
181	GAT AAG CCA CTT GGA TAC GAT TTC TAC AGA TTT GAG AAC TTC ATT TCA GAT TTA GAT GCG	240
61	Asp Lys Pro Leu Gly Tyr Asp Phe Tyr Arg Phe Glu Asn Phe Ile Ser Asp Leu Asp Ala	80
241	GTT GTT AGG GAG ACT GGA GTG GAG AAA TTT GTT CTC GTC GGA CAT TCA TTC GGA ACA ATG	300
81	Val Val Arg Glu Thr Gly Val Glu Lys Phe Val Leu Val Gly His Ser Phe Gly Thr Met	100
301	ATC TCT ATG AAG TAC TGT TCG GAG TAT CGG AAT CGG GTT CTT GCT CTA ATC CTC ATA GGT	360
101	Ile Ser Met Lys Tyr Cys Ser Glu Tyr Arg Asn Arg Val Leu Ala Leu Ile Leu Ile Gly	120
361	GGT GGG AGC AGA ATA AAG CTT CTA CAC AGA ATT GGA TAT CCT TTA GCA AAG ATT CTT GCA	420
121	Gly Gly Ser Arg Ile Lys Leu Leu His Arg Ile Gly Tyr Pro Leu Ala Lys Ile Leu Ala	140
421	TCC ATT GCA TAC AAG AAG TCT TCA AGA TTG GTC GCA GAT CTT TCC TTT GGC AAA AAT GCT	480
141	Ser Ile Ala Tyr Lys Lys Ser Ser Arg Leu Val Ala Asp Leu Ser Phe Gly Lys Asn Ala	160
481	GGT GAA CTT AAA GAG TGG GGA TGG AAA CAG GCA ATG GAT TAT ACA CCC TCC TAC GTG GCA	540
161	Gly Glu Leu Lys Glu Trp Gly Trp Lys Gln Ala Met Asp Tyr Thr Pro Ser Tyr Val Ala	180
541	ATG TAC ACG TAC AGA ACT CTA ACG AAA GTG AAT CTT GAA AAT ATC TTG GAG AAA ATA GAC	600
181	Met Tyr Thr Tyr Arg Thr Leu Thr Lys Val Asn Leu Glu Asn Ile Leu Glu Lys Ile Asp	200
601	TGT CCA ACA CTG ATT ATC GTT GGA GAA GAG GAT GCA CTA TTG CCC GTT AGC AAA TCA GTT	660
201	Cys Pro Thr Leu Ile Ile Val Gly Glu Glu Asp Ala Leu Leu Pro Val Ser Lys Ser Val	220
661	GAG CTG AGC AGG AGG ATA GAA AAC TCA AAG CTT GTG ATC ATC CCA AAC TCG GGG CAT TGC	720
221	Glu Leu Ser Arg Arg Ile Glu Asn Ser Lys Leu Val Ile Ile Pro Asn Ser Gly His Cys	240
721	GTA ATG CTT GAG AGT CCA AGT GAG GTT AAT AGA GCA ATG GAC GAA TTC ATT TCT TCA GCA	780
241	Val Met Leu Glu Ser Pro Ser Glu Val Asn Arg Ala Met Asp Glu Phe Ile Ser Ser Ala	260
781	CAG TTC TAA	789
261	Gln Phe End	263



FIGURE 5

M11TL-29L.

1	ATG	TTT	AAT	ATC	AAT	GTC	TTT	GTT	AAT	ATA	TCT	TGG	CTG	TAT	TTT	TCA	GGG	ATA	GTT	ATG	60
1	Met	Phe	Asn	Ile	Asn	Val	Phe	Val	Asn	Ile	Ser	Trp	Leu	Tyr	Phe	Ser	Gly	Ile	Val	Met	20
61	AAG	ACT	GTG	GAA	GAG	TAT	GCG	CTA	CTT	GAA	ACA	GGC	GTA	AGA	GTG	TTT	TAT	CGG	TGT	GTA	120
21	Lys	Thr	Val	Glu	Glu	Tyr	Ala	Leu	Leu	Glu	Thr	Gly	Val	Arg	Val	Phe	Tyr	Arg	Cys	Val	40
121	ATC	CCG	GAG	AAA	GCT	TTT	AAC	ACT	TTG	ATA	ATA	GGT	TCA	CAC	GGA	TTG	GGG	GCG	CAC	AGT	180
41	Ile	Pro	Glu	Lys	Ala	Phe	Asn	Thr	Leu	Ile	Ile	Gly	Ser	His	Gly	Leu	Gly	Ala	His	Ser	60
181	GGA	ATC	TAC	ATT	AGT	GTT	GCT	GAA	GAA	TTT	GCT	AGG	CAC	GGA	TTT	GGA	TTC	TGC	ATG	CAC	240
61	Gly	Ile	Tyr	Ile	Ser	Val	Ala	Glu	Glu	Phe	Ala	Arg	His	Gly	Phe	Gly	Phe	Cys	Met	His	80
241	GAT	CAA	AGG	GGA	CAT	GGG	AGA	ACG	GCA	AGC	GAT	AGA	GAA	AGA	GGG	TAT	GTG	GAG	GGC	TTT	300
81	Asp	Gln	Arg	Gly	His	Gly	Arg	Thr	Ala	Ser	Asp	Arg	Glu	Arg	Gly	Tyr	Val	Glu	Gly	Phe	100
301	CAC	AAC	TTC	ATA	GAG	GAT	ATG	AAG	GCC	TTC	TCC	GAT	TAT	GCC	AAG	TGG	CGC	GTG	GGA	GGT	360
101	His	Asn	Phe	Ile	Glu	Asp	Met	Lys	Ala	Phe	Ser	Asp	Tyr	Ala	Lys	Trp	Arg	Val	Gly	Gly	120
361	GAC	GAA	ATA	ATA	TTG	CTA	GGA	CAC	AGT	ATG	GGC	GGG	CTG	ATA	GCG	CTC	TTA	ACA	GTT	GCA	420
121	Asp	Glu	Ile	Ile	Leu	Leu	Gly	His	Ser	Met	Gly	Gly	Leu	Ile	Ala	Leu	Leu	Thr	Val	Ala	140
421	ACT	TAT	AAA	GAA	ATC	GCC	AAG	GGA	GTT	ATC	GCG	CTA	GCC	CCG	GCC	CTC	CAA	ATC	CCC	TTA	480
141	Thr	Tyr	Lys	Glu	Ile	Ala	Lys	Gly	Val	Ile	Ala	Leu	Ala	Pro	Ala	Leu	Gln	Ile	Pro	Leu	160
481	ACC	CCG	GCT	AGA	AGA	CTT	GTT	CTA	AGC	CTC	GCG	TCA	AGG	CTT	GCC	CCG	CAT	TCT	AAG	ATC	540
161	Thr	Pro	Ala	Arg	Arg	Leu	Val	Leu	Ser	Leu	Ala	Ser	Arg	Leu	Ala	Pro	His	Ser	Lys	Ile	180
541	ACC	TTA	CAA	AGG	AGA	TTG	CCG	CAG	AAA	CCA	GAG	GGT	TTT	CAA	AGA	GCA	AAA	GAT	ATA	GAA	600
181	Thr	Leu	Gln	Arg	Arg	Leu	Pro	Gln	Lys	Pro	Glu	Gly	Phe	Gln	Arg	Ala	Lys	Asp	Ile	Glu	200
601	TAC	AGT	CTG	AGT	GAA	ATA	TCA	GTC	AAG	CTC	GTG	GAC	GAA	ATG	ATT	AAA	GCA	TCA	TCT	ATG	660
201	Tyr	Ser	Leu	Ser	Glu	Ile	Ser	Val	Lys	Leu	Val	Asp	Glu	Met	Ile	Lys	Ala	Ser	Ser	Met	220
661	TTC	TGG	ACC	ATA	GCA	GGG	GAA	ATT	AAT	ACT	CCC	GTC	CTG	CTT	ATT	CAT	GGG	GAA	AAA	GAC	720
221	Phe	Trp	Thr	Ile	Ala	Gly	Glu	Ile	Asn	Thr	Pro	Val	Leu	Leu	Ile	His	Gly	Glu	Lys	Asp	240
721	AAT	GTC	ATA	CCT	CCG	GAG	GCG	AGC	AAA	AAA	GCC	TAC	CAA	TTA	ATA	CCT	TCA	TTC	CCT	AAA	780
241	Asn	Val	Ile	Pro	Pro	Glu	Ala	Ser	Lys	Lys	Ala	Tyr	Gln	Leu	Ile	Pro	Ser	Phe	Pro	Lys	260
781	GAG	TTG	AAA	ATA	TAC	CCC	GAT	CTT	GGA	CAC	AAC	TTG	TTT	TTT	GAA	CCA	GGC	GCG	GTG	AAA	840
261	Glu	Leu	Lys	Ile	Tyr	Pro	Asp	Leu	Gly	His	Asn	Leu	Phe	Phe	Glu	Pro	Gly	Ala	Val	Lys	280
841	ATC	GTC	ACA	GAC	ATT	GTA	GAG	TGG	GTT	AAG	AAT	CTA	CCC	AGG	GAA	AAT	CCT	TAA			894
281	Ile	Val	Thr	Asp	Ile	Val	Glu	Trp	Val	Lys	Asn	Leu	Pro	Arg	Glu	Asn	Pro	End			298



	1	TTG ATT GGC AAT TTG AAA TTG AAG AGG TTT GAA GAG GTT AAC TTA GTT CTT TCG GGA GGG	60
	1	Leu Ile Gly Asn Leu Lys Leu Lys Arg Phe Glu Glu Val Asn Leu Val Leu Ser Gly Gly	20
	61	GCT GCC AAG GGT ATC GCC CAT ATA GGT GTT TTA AAA GCT CTG GAA GAG CTC GGT ATA AAG	120
	21	Ala Ala Lys Gly Ile Ala His Ile Gly Val Leu Lys Ala Leu Glu Glu Leu Gly Ile Lys	40
	121	GTA AAG AGG CTC AGC GGG GTA AGT GCT GGA GCT ATC GTT TCC GTC TTT TAC GCT TCG GGC	180
	41	Val Lys Arg Leu Ser Gly Val Ser Ala Gly Ala Ile Val Ser Val Phe Tyr Ala Ser Gly	60
	181	TAC ACT CCC GAC GAG ATG TTA AAA CTC CTG AAA GAG GTA AAC TGG CTC AAA CTT TTT AAG	240
	61	Tyr Thr Pro Asp Glu Met Leu Lys Leu Leu Lys Glu Val Asn Trp Leu Lys Leu Phe Lys	80
	241	TTC AAA ACA CCG AAA ATG GGC TTA ATG GGG TGG GAG AAG GCT GCA GAG TTT TTG GAA AAA	300
	81	Phe Lys Thr Pro Lys Met Gly Leu Met Gly Trp Glu Lys Ala Ala Glu Phe Leu Glu Lys	100
	301	GAG CTC GGA GTT AAG AGG CTG GAA GAC CTG AAC ATA CCA ACC TAT CTT TGC TCG GCG GAT	360
	101	Glu Leu Gly Val Lys Arg Leu Glu Asp Leu Asn Ile Pro Thr Tyr Leu Cys Ser Ala Asp	120
	361	CTG TAC ACG GGA AAG GCT CTT TAC TTC GGC AGA GGT GAC TTA ATT CCC GTG CTT CTC GGA	420
	121	Leu Tyr Thr Gly Lys Ala Leu Tyr Phe Gly Arg Gly Asp Leu Ile Pro Val Leu Leu Gly	140
	421	AGT TGT TCC ATA CCC GGG ATT TTT GAA CCA GTT GAG TAC GAG AAT TTT CTA CTT GTT GAC	480
	141	Ser Cys Ser Ile Pro Gly Ile Phe Glu Pro Val Glu Tyr Glu Asn Phe Leu Leu Val Asp	160
	481	GGA GGT ATA GTG AAC AAC CTG CCC GTA GAA CCT TTG GAA AAG TTC AAA GAA CCC ATA ATC	540
	161	Gly Gly Ile Val Asn Asn Leu Pro Val Glu Pro Leu Glu Lys Phe Lys Glu Pro Ile Ile	180
	541	GGG GTA GAT GTG CTT CCC ATA ACT CAA GAA AGA AAG ATT AAA AAT ATA CTC CAC ATC CTT	600
	181	Gly Val Asp Val Leu Pro Ile Thr Gln Glu Arg Lys Ile Lys Asn Ile Leu His Ile Leu	200
	601	ATA AGG AGC TTC TTT CTG GCG GTT CGT TCC AAT TCG GAA AAG AGA AAG GAG TTC TGC AAC	660
	201	Ile Arg Ser Phe Phe Leu Ala Val Arg Ser Asn Ser Glu Lys Arg Lys Glu Phe Cys Asn	220
	661	GTA GTT ATA GAA CCT CCC CTT GAA GAG TTC TCT CCT CTG GAC GTA AAT AAG GCG GAC GAG	720
	221	Val Val Ile Glu Pro Pro Leu Glu Glu Phe Ser Pro Leu Asp Val Asn Lys Ala Asp Glu	240
	721	ATA TTC TGC GGG GAT ATG AGA GCA CTT TAA      750	
	241	Ile Phe Cys Gly Asp Met Arg Ala Leu End      250	

FIGURE 8

Teredinibacter - 42L

1	ATG	CCA	GCT	AAT	GAC	TCA	CCC	ACG	ATC	GAC	TTT	AAT	CCT	CGC	GGC	ATT	CTT	CGC	AAC	GCT	60
1	Met	Pro	Ala	Asn	Asp	Ser	Pro	Thr	Ile	Asp	Phe	Asn	Pro	Arg	Gly	Ile	Leu	Arg	Asn	Ala	20
61	CAC	GCA	CAG	GTT	ATT	TTA	GCG	ACT	TCC	GGC	TTG	CGC	AAA	GCG	TTT	TTG	AAA	CGC	ACG	CAC	120
21	His	Ala	Gln	Val	Ile	Leu	Ala	Thr	Ser	Gly	Leu	Arg	Lys	Ala	Phe	Leu	Lys	Arg	Thr	His	40
121	AAG	AGC	TAC	CTC	AGC	ACT	GCC	CAA	TGG	CTG	GAG	CTC	GAT	GCC	GGC	AAC	GGA	GTT	ACC	TTG	180
41	Lys	Ser	Tyr	Leu	Ser	Thr	Ala	Gln	Trp	Leu	Glu	Leu	Asp	Ala	Gly	Asn	Gly	Val	Thr	Leu	60
181	GCC	GGA	GAG	CTT	AAC	ACA	GCG	CCT	GCA	ACT	GCA	TCC	TCC	TCC	CAC	CCG	GCG	CAC	AAG	AAC	240
61	Ala	Gly	Glu	Leu	Asn	Thr	Ala	Pro	Ala	Thr	Ala	Ser	Ser	Ser	His	Pro	Ala	His	Lys	Asn	80
241	ACT	CTG	GTT	ATT	GTG	CTG	CAC	GGC	TGG	GAA	GGC	TCC	AGC	CAG	TCG	GCC	TAT	GCG	ACC	TCC	300
81	Thr	Leu	Val	Ile	Val	Leu	His	Gly	Trp	Glu	Gly	Ser	Ser	Gln	Ser	Ala	Tyr	Ala	Thr	Ser	100
301	GCT	GGC	AGC	ACG	CTT	TTC	GAC	AAT	GGG	TTC	GAC	ACT	TTT	CGC	CTT	AAT	TTT	CGC	GAT	CAC	360
101	Ala	Gly	Ser	Thr	Leu	Phe	Asp	Asn	Gly	Phe	Asp	Thr	Phe	Arg	Leu	Asn	Phe	Arg	Asp	His	120
361	GGC	GAC	ACC	TAC	CAC	TTA	AAC	CGC	GGC	ATA	TTT	AAC	TCA	TCG	CTG	ATT	GAC	GAA	GTA	GTG	420
121	Gly	Asp	Thr	Tyr	His	Leu	Asn	Arg	Gly	Ile	Phe	Asn	Ser	Ser	Leu	Ile	Asp	Glu	Val	Val	140
421	GGC	GCA	GTC	AAA	GCC	ATC	CAG	CAG	CAA	ACC	GAC	TAC	GAC	AAG	TAT	TGC	CTG	ATG	GGG	TTC	480
141	Gly	Ala	Val	Lys	Ala	Ile	Gln	Gln	Gln	Thr	Asp	Tyr	Asp	Lys	Tyr	Cys	Leu	Met	Gly	Phe	160
481	TCA	CTG	GGT	GGG	AAC	TTT	GCC	TTG	CGC	GTC	GCG	GTG	CGG	GAA	CAG	CAT	CTC	GCT	AAA	CCG	540
161	Ser	Leu	Gly	Gly	Asn	Phe	Ala	Leu	Arg	Val	Ala	Val	Arg	Glu	Gln	His	Leu	Ala	Lys	Pro	180
541	CTA	GCG	GGC	GTG	CTC	GCC	GTA	TGC	CCG	GTA	CTC	GAC	CCC	GCA	CAC	ACC	ATG	ATG	GCC	CTA	600
181	Leu	Ala	Gly	Val	Leu	Ala	Val	Cys	Pro	Val	Leu	Asp	Pro	Ala	His	Thr	Met	Met	Ala	Leu	200
601	AAC	CGA	GGT	GCG	TTT	TTC	TAC	GGC	CGC	TAT	TTT	GCG	CAT	AAA	TGG	AAG	CGC	TCG	TTA	ACC	660
201	Asn	Arg	Gly	Ala	Phe	Phe	Tyr	Gly	Arg	Tyr	Phe	Ala	His	Lys	Trp	Lys	Arg	Ser	Leu	Thr	220
661	GCA	AAA	CTT	GCA	GCT	TTC	CCA	GAC	TAC	AAA	TAC	GGC	AAA	GAT	TTA	AAA	TCG	ATA	CAC	ACG	720
221	Ala	Lys	Leu	Ala	Ala	Phe	Pro	Asp	Tyr	Lys	Tyr	Gly	Lys	Asp	Leu	Lys	Ser	Ile	His	Thr	240
721	CTT	GAT	GAG	TTA	AAC	AAC	TAT	TTC	ATT	CCC	CGC	TAC	ACC	GGC	TTC	AAC	TCA	GTC	TCC	GAA	780
241	Leu	Asp	Glu	Leu	Asn	Asn	Tyr	Phe	Ile	Pro	Arg	Tyr	Thr	Gly	Phe	Asn	Ser	Val	Ser	Glu	260
781	TAC	TTC	AAA	AGT	TAC	ACG	CTC	ACC	GGG	CAG	AAG	CTC	GCG	TTT	CTC	AAC	TGC	CCC	AGT	TAC	840
261	Tyr	Phe	Lys	Ser	Tyr	Thr	Leu	Thr	Gly	Gln	Lys	Leu	Ala	Phe	Leu	Asn	Cys	Pro	Ser	Tyr	280
841	ATT	CTG	GCA	GCT	GGC	GAC	GAC	CCA	ATA	ATT	CCA	GCA	TCC	GAC	TTT	CAG	AAA	ATA	GCC	AAG	900
281	Ile	Leu	Ala	Ala	Gly	Asp	Asp	Pro	Ile	Ile	Pro	Ala	Ser	Asp	Phe	Gln	Lys	Ile	Ala	Lys	300
901	CCT	GCG	AAT	CTG	CAC	ATA	ACA	GTA	ACG	CAA	CAA	GGT	TCT	CAT	TGC	GCA	TAC	CTG	GAA	AAC	960
301	Pro	Ala	Asn	Leu	His	Ile	Thr	Val	Thr	Gln	Gln	Gly	Ser	His	Cys	Ala	Tyr	Leu	Glu	Asn	320
961	CTG	CAT	AAA	CCT	AGT	GCT	GCC	GAC	AAA	TAT	GCG	GTG	AAA	TTA	TTT	GGA	GCC	TGT	TGA	1017	
321	Leu	His	Lys	Pro	Ser	Ala	Ala	Asp	Lys	Tyr	Ala	Val	Lys	Leu	Phe	Gly	Ala	Cys	End	339	



FIGURE 9

*Archeoglobus fulgidus* VC16 - 16MC1

ATG CTT GAT ATG CCA ATC GAC CCT GTT TAC TAC CAG CTT GCT GAG TAT  
 Met Leu Asp Met Pro Ile Asp Pro Val Tyr Tyr Gln Leu Ala Glu Tyr  
 1 5 10 15  
 TTC GAC AGT CTG CCG AAG TTC GAC CAG TTT TCC TCG GCC AGA GAG TAC  
 Phe Asp Ser Leu Pro Lys Phe Asp Gln Phe Ser Ser Ala Arg Glu Tyr  
 20 25 30  
 AGG GAG GCG ATA AAT CGA ATA TAC GAG GAG AGA AAC CCG CAG CTG AGC  
 Arg Glu Ala Ile Asn Arg Ile Tyr Glu Glu Arg Asn Arg Gln Leu Ser  
 35 40 45  
 CAG CAT GAG AGG GTT GAA AGA GTT GAG GAC AGG ACG ATT AAG GGG AGG  
 Gln His Glu Arg Val Glu Arg Val Glu Asp Arg Thr Ile Lys Gly Arg  
 50 55 60  
 AAC GGA GAC ATC AGA GTC AGA GTT TAC CAG CAG AAG CCC GAT TCC CCG  
 Asn Gly Asp Ile Arg Val Arg Val Tyr Gln Gln Lys Pro Asp Ser Pro  
 65 70 75 80  
 GGT CTG GTT TAC TAT CAC GGT GGT GGA TTT GTG ATT TGC AGC ATC GAG  
 Val Leu Val Tyr Tyr His Gly Gly Gly Phe Val Ile Cys Ser Ile Glu  
 85 90 95  
 TCG CAC GAC GCC TTA TGC AGG AGA AYY GCG AGA CTT TCA AAC TCT ACC  
 Ser His Asp Ala Leu Cys Arg Arg Ile Ala Arg Leu Ser Asn Ser Thr  
 100 105 110  
 GTA GTC TCC GTG GAT TAC AGG CTC GCT CCT GAG CAC AAG TTT CCC CCC  
 Val Val Ser Val Asp Tyr Arg Leu Ala Pro Glu His Lys Phe Pro Ala  
 115 120 125  
 CCA GTT TAT CAT TGC TAC GAT GCG ACC AAG TGG GTT GCT GAG AAC CCG  
 Ala Val Tyr Asp Cys Tyr Aso Ala Thr Lys Trp Val Ala Glu Asn Ala  
 130 135 140  
 GAG GAG CTG AGG ATT GAC CCG TCA AAA ATC TTC GTT GGG GGG GAC AGT  
 Glu Glu Leu Arg Ile Asp Pro Ser Lys Ile Phe Val Gly Gly Asp Ser  
 145 150 155 160  
 CCG GGA CCG AAT CTT GCC CCG GCG CTT TCA ATA ATG GCG AGA GAC AGC  
 Ala Gly Gly Asn Leu Ala Ala Val Ser Ile Met Ala Arg Asp Ser  
 165 170 175  
 GGA GAA GAT TTC ATA AAG CAT CAA ATT CTA ACT TAC CCC GTT GTC AAC  
 Gly Glu Asp Phe Ile Lys His Gln Ile Leu Ile Tyr Pro Val Val Asn  
 180 185 190  
 TTT GTA GCC CCC ACA CCA TCG CTT CTG GAG TTT GGA GAG GGG CTG TGG  
 Phe Val Ala Pro Thr Pro Ser Leu Leu Glu Phe Gly Glu Leu Trp  
 195 200 205  
 ATT CTC GAC CAG AAG ATA ATG AGT TGG TTC TCG GAG CAG TAC TTC TCC  
 Ile Leu Asp Gln Lys Ile Met Ser Trp Phe Ser Glu Gln Tyr Phe Ser  
 210 215 230  
 AGA GAG GAA GAT AAG TTC AAG CCC CTC GCC TCC GTA ATC TTT GCG GAC  
 Arg Glu Glu Aso Lys Phe Asn Pro Leu Ala Ser Val Ile Phe Ala Asp  
 235 240 245 250  
 CTT GAG AAC CTA CCT CCT GCG CTG ATC ATA ACC GCC GAA TAC GAC CCG  
 Leu Glu Asn Leu Pro Pro Ala Leu Ile Ile Thr Ala Glu Tyr Asp Pro  
 255 260 265  
 CTG AGA GAT GAA GGA GAA GTT TTC GGG CAG ATG CTG AGA AGA GCC GGT  
 Leu Arg Asp Glu Gly Glu Val Phe Gly Gln Met Leu Arg Arg Ala Gly  
 270 275 280  
 GTT GAG GCG AGC ATC GTC AGA TAC AGA GGC GTG CTT CAC GGA TTC ATC  
 Val Glu Ala Ser Ile Val Arg Tyr Arg Gly Val Leu His Gly Phe Ile  
 285 290 295  
 AAT TAC TAT CCC GTG CTG AAG GCT GCG AGG GAT GCG ATA AAC CAG ATT  
 Asn Tyr Tyr Pro Val Leu Lys Ala Ala Arg Asp Ala Ile Asn Gln Ile  
 300 305 310  
 GCC GCT CTT CTT GTG TTC GAC TAG  
 Ala Ala Leu leu Val Phe Asp  
 315 320

FIGURE 10

*Sulfolobus Solfataricus* Pl - 8LC1

ATG CCC CTA GAT CCT AGA ATT AAA AAG TTA CTA GAA TCA GCT CTT ACT  
 Met Pro Leu Asp Pro Arg Ile Lys Lys Leu Leu Glu Ser Ala Leu Thr  
 1 5 10 15  
 ATA CCA ATT GGT AAA GCC CCA GTA GAA GAG GTA AGA AAG ATA TTT AGG  
 Ile Pro Ile Gly Lys Ala Pro Val Glu Glu Val Arg Lys Ile Phe Arg  
 20 25 30  
 CAA TTA GCG TCG GCA GCT CCC AAA GTC GAA GTT GGA AAA GTA GAA GAT  
 Gln Leu Ala Ser Ala Ala Pro Lys Val Glu Val Gly Lys Val Glu Asp  
 35 40 45  
 ATA AAA ATA CCA GGC AGT GAA ACC GTT ATA AAC GCT AGA GTG TAT TTT  
 Ile Lys Ile Pro Gly Ser Glu Thr Val Ile Asn Ala Arg Val Tyr Phe  
 50 55 60  
 CCG AAG AGT AGC GGT CCT TAT GGT GTT CTA GTG TAT CTT CAT GGA GGC  
 Pro Lys Ser Ser Gly Pro Tyr Gly Val Leu Val Tyr Leu His Gly Gly  
 65 70 75 80  
 GGT TTT GTA ATA GGC GAT GTG GAA TCT TAT GAC CCA TTA TGT AGA GCA  
 Gly Phe Val Ile Gly Asp Val Glu Ser Tyr Asp Pro Leu Cys Arg Ala  
 85 90 95  
 ATT ACA AAT GCG TGC AAT TGC GTT GTA GTA TCA GTG GAC TAT AGG TTA  
 Ile Thr Asn Ala Cys Asn Cys Val Val Val Ser Val Asp Tyr Arg Leu  
 100 105 110  
 GCT CCA GAA TAC AAG TTT CCT TCT GCA GTT ATC GAT TCA TTT GAC GCT  
 Ala Pro Glu Tyr Lys Phe Pro Ser Ala Val Ile Asp Ser Phe Asp Ala  
 115 120 125  
 ACT AAT TGG GTT TAT AAC AAT TTA GAT AAA TTT GAT GGA AAG ATG GGA  
 Thr Asn Trp Val Tyr Asn Asn Leu Asp Lys Phe Asp Gly Lys Met Gly  
 130 135 140  
 GTT GCG ATT GCG GGA GAT AGT GCT GGA GGA AAT TTG GCA GCG GTT GTA  
 Val Ala Ile Ala Gly Asp Ser Ale Gly Gly Asn Leu Ala Ala Val Val  
 145 150 155 160  
 GCT CTT CTT TCA AAG GGT AAA ATT AAT TTG AAG TAT CAA ATA CTG GTT  
 Ala Leu Leu Ser Lys Gly Lys Ile Asn Leu Lys Tyr Gln Ile Leu Val  
 165 170 175  
 TAC CCA GCG GTA AGT TTA GAT AAC GTT TCA AGA TCC ATG ATA GAG TAC  
 Tyr Pro Ala Val Ser Leu Asp Asn Val Ser Arg Ser Met Ile Glu Tyr  
 180 185 190  
 TCT GAT GGG TTC TTC CTT ACC AGA GAG CAT ATA GAG TGG TTC GGT TCT  
 Ser Asp Gly Phe Phe Leu Thr Arg Glu His Ile Glu Trp Phe Gly Ser  
 195 200 205  
 CAA TAC TTA CGA AGC CCT GCA GAT TTG CTA GAC TTT AGG TTC TCT CCA  
 Gln Tyr Leu Arg Ser Pro Ala Asp Leu Leu Asp Phe Arg Phe Ser Pro  
 210 215 220  
 ATT CTG GCG CAA GAT TTC AAC GGA TTA CCT CCA GCC TTG ATA ATA ACA  
 Ile Leu Ala Gln Asp Phe Asn Gly Leu Pro Pro Ala Leu Ile Ile Thr  
 225 230 235 240  
 GCA GAA TAC GAT CCA CTA AGG GAT CAA GGA GAA GCG TAT GCA AAT AAA  
 Ala Glu Tyr Asp Pro Leu Arg Asp Gln Gly Glu Ala Tyr Ala Asn Lys  
 245 250 255  
 CTA CTA CAA GCT GGA GTC TCA GTT ACT AGT GTG AGA TTT AAC AAC GTT  
 Leu Leu Gln Ala Gly Val Ser Val Thr Ser Val Arg Phe Asn Asn Val  
 260 265 270  
 ATA CAC GGA TTC CTC TCA TTC TTT CCG TTG ATG GAG CAA GGA AGA GAT  
 Ile His Gly Phe Leu Ser Phe Phe Pro Leu Met Glu Gln Gly Arg Asp  
 275 280 285  
 GCT ATA GGT CTG ATA GGG TCT GTG TTA AGA CGA GTA TTT TAT GAT AAA  
 Ala Ile Gly Leu Ile Gly Ser Val Leu Arg Arg Val Phe Tyr Asp Lys  
 290 295 300  
 ATT TAA  
 Ile  
 305